

# **ATTACHMENT 16**

## **THE CAMDS Site Monitoring Plan**

**April 2008**

## TABLE OF CONTENTS

SECTION	PAGE NO.
<b>1.0. INTRODUCTION.....</b>	<b>4</b>
1.1 OBJECTIVES.....	4
<b>2.0 SUPERVISORY RESPONSIBILITIES AND COORDINATION.....</b>	<b>4</b>
<b>3.0 AGENT AIRBORNE EXPOSURE LIMITS (AEL), EMISSION LIMITS AND CATEGORY AREAS.....</b>	<b>5</b>
3.1 AEL DEFINITIONS .....	5
3.2 OTHER NON-HEALTH BASED EMISSION LIMITS.....	5
<b>4.0 CATEGORY AREAS.....</b>	<b>6</b>
<b>5.0 MONITORING EQUIPMENT AND AGENTS MONITORED.....</b>	<b>6</b>
5.1 NEAR REAL TIME MONITORS.....	7
5.2 DEPOT AREA AIR MONITORING SYSTEM.....	7
5.3 REAL TIME ANALYTICAL PLATFORM (RTAPS) .....	7
5.4 DILUTION AIR FLOW CONTROLLERS (DAFC) .....	7
5.5 BACKUP EQUIPMENT.....	7
<b>6.0 CAMDS MONITORING AREAS.....</b>	<b>8</b>
6.1 CAMDS SITE AREAS .....	8
6.2 PERIMETER MONITORING .....	9
6.4 TOCDF CAL MUSTARD MONITORING.....	6
<b>7.0 QUALITY CONTROL.....</b>	<b>10</b>
<b>8.0 AGENT ALARM NOTIFICATION PROCEDURES AND DOCUMENTATION. 10</b>	
8.1 MPF STACK ALARM FOR VX, GB OR MUSTARD .....	10
8.2 HVAC FILTER STACK ALARM FOR VX, GB, AND MUSTARD.....	10
8.3 WORKPLACE MONITORING FOR VX, GB AND MUSTARD (CATEGORIES C AND D AREAS) .....	10
<b>9.0 LIMITING CONDITIONS OF OPERATION (LCOS).....</b>	<b>10</b>
<b>10.0 FAILURE TO MONITOR.....</b>	<b>10</b>
10.1 HVAC and MPF Stack .....	11
<b>11.0 NRT MONITOR ALARMS AND NOTIFICATION PROCEDURES .....</b>	<b>11</b>
<b>12.0 MONITORING PLAN REVIEW AND PERMIT MODIFICATION .....</b>	<b>11</b>
12.1 TEMPORARY CHANGES .....	11
<b>13.0 MONITOR/MONITORING STATION LOCATIONS AND REPORTS .....</b>	<b>12</b>
13.1 MONITORS LOCATIONS .....	12
13.2 MONITORING STATION DATABASE .....	12
13.3 MONTHLY SITE MONITORING PLAN/REPORT .....	12
<b>14.0 CAMDS SITE SKETCHES .....</b>	<b>13</b>
<b>15.0 PROCEDURES FOR ADDING NEW MONITORING STATIONS.....</b>	<b>15</b>

## **ATTACHMENTS**

Attachment A:	Example Primary Monitoring Report
Attachment B:	Example Secondary Monitoring Report
Attachment C:	Site Sketches with Monitoring Station Locations
Attachment D:	AMSCM-OPDC Form 5020-R-E
Attachment E:	References
Attachment F:	Glossary

## **TABLES**

Table 2-1:	Supervisory Titles and Responsibilities.
Table 3-1:	Agent AEL level, Stack Limits and Aspirations Times.
Table 4-1:	Definitions of Category Areas and designated activities.
Table 6-1:	CAL areas supported buy the CAMDS Monitoring Division.
Table 14-1:	Index of the sketch numbers and their locations.

## 1.0 INTRODUCTION

The CAMDS Site (Site) Monitoring Plan (CSMP) is prepared in accordance with (IAW) requirements specified in the Chemical Materials Agency (CMA) Monitoring Concept Plan (MCP) (at a minimum) and the CAMDS Laboratory and Monitoring Quality Assurance Plan (CLMQAP) (Permit, Attachment 3).

### 1.1 Objectives

This CSMP shall ensure a coordinated effort between Directorate of Operations Support and Directorate of Risk Management to achieve an effective monitoring program. The Monitoring Plan provides identification of monitoring devices and sampling locations utilized at the CAMDS Site. The identified monitors are used to provide agent detection and provide worker and general population protection, and to indicate plant operations are in control. The Site plan also provides procedures for changing activity status of the monitoring stations (adding or removing), and monitoring requirements.

## 2.0 SUPERVISORY RESPONSIBILITIES AND COORDINATION

There are four supervisory levels coordinating the Site monitoring at the CAMDS. Supervisory Titles and responsibilities are outlined below in Table 2-1.

<b>Table 2-1: Supervisory Titles and Responsibilities</b>	
<b>Title</b>	<b>Responsibilities</b>
Monitoring Division Chief	<ol style="list-style-type: none"> <li>1. Ensures the objectives of the Site monitoring plan are implemented.</li> <li>2. Tracks the status of Site operations to identify and meet all monitoring requirements of the CAMDS Part B Permit.</li> <li>3. Coordinates Quality Assurance (QA) activities related to monitoring through the Director of Operations Support.</li> <li>4. Ensures the accuracy of the Monitoring Database and monitoring station sketches.</li> </ol>
Director of Operations Support	<ol style="list-style-type: none"> <li>1. Provides interface support requirements with the other Directorates.</li> <li>2. Ensures required resources are available to implement and maintain all monitoring systems and requirements.</li> </ol>
CAMDS Site Project Managers	<ol style="list-style-type: none"> <li>1. Identify necessary monitoring requirements to support tests and projects that are in compliance with this Permit.</li> <li>2. Ensures that Monitoring Division Chief is aware of any changes in the test or work monitoring requirements caused by schedule and other changes in workload.</li> </ol>
Director of Chemical Operations	<ol style="list-style-type: none"> <li>1. Identify monitoring requirements that support maintenance and other Site work scheduled by Directorate of Chemical Operations.</li> <li>2. Requests monitoring changes on AMSCM-OPDC Form 5020-R-E, Request for Change for Monitoring System (Appendix D).</li> </ol>

### **3.0 AGENT AIRBORNE EXPOSURE LIMITS (AEL), EMISSION LIMITS AND CATEGORY AREAS**

Airborne Exposure Limits (AEL) for monitored agents at the CAMDS Site are compiled in Table 3-1. AEL are standards that are set by the CDC in the Federal Register 68 58348 (October 9, 2003) for GA, GB, and VX, and FR 69 24164 (May 3, 2004) Mustard. Lewisite was not updated from the previous Federal Register 53 8504-8508 (March 15, 1988). Agent AEL levels are listed in Table 3-1.

#### **3.1 AEL Definitions**

##### **3.1.1 Immediately Dangerous to Life and Health (IDLH)**

IDLH is the maximum concentration, in the event of respirator failure, where a person could escape, within 30 minutes, without a respirator and without experiencing any escape impairing (e.g. severe eye irritation) or irreversible health effects.

IDLH levels are 0.1 mg/m<sup>3</sup> for GB/GA, 0.003 mg/m<sup>3</sup> for VX, and for Lewisite 0.7 mg/m<sup>3</sup> for Mustard. The Mustard IDLH is only based on non-carcinogenic effects.

##### **3.1.2 Short Term Exposure Limit (STEL)**

STEL is the maximum concentration to which unprotected chemical agent workers may be exposed to for up to 15 minutes, continuously. The STEL for GB/GA is 1x10<sup>-4</sup> mg/m<sup>3</sup> with a limit of four daily exposures. The STEL limit for VX is 1x10<sup>-5</sup> and the limit for Mustard is 3x10<sup>-3</sup>. Only one exposure daily is allowed at the STEL for VX and for Mustard.

##### **3.1.3 Worker Population Limit (WPL)**

WPL is the average allowable concentration that an unmasked worker could be exposed to for an 8 to 12 hours workday 40 hours per week for 30 years without adverse effects. The WPL for the CAMDS has been adjusted to reflect a 12-hour work shift. The 12-hour WPL for GB/GA is 2 x 10<sup>-5</sup>, VX is 6 x 10<sup>-7</sup>, and HD is 2.7 X 10<sup>-4</sup>.

##### **3.1.4 General Population Limit (GPL)**

The GPL is a allowable 72-hour time-weighted average concentration for the general population. The limit applies to the entire population, including all ages and medical conditions. For GB, the GPL is 1 x 10<sup>-6</sup> mg/m<sup>3</sup> for 24 hours. For VX, the GPL is 6 x 10<sup>-7</sup> mg/m<sup>3</sup> for 24 hours. For HD, the GPL is 2 x 10<sup>-5</sup> mg/m<sup>3</sup> for 12 hours.

#### **3.2 Other Non-health Based Emission Limits**

##### **3.2.1 Source Emission Limit (SEL)**

Source Emission Limit was previously known as the Allowable Stack Concentration (ASC). SEL is a ceiling value that serves as a source emission limit, and not as a health standard. The SEL is used for monitoring the MPF stack. The SEL provides an early indication of upset conditions, and must be accurately measurable in a timely manner.

It should be noted when monitoring at the MPF stack, that because of the high temperature and moisture content of stack emissions, dilution control devices are used in conjunction with the NRT monitors and DAAMS. The SEL value for GB and VX is 0.0003 mg/m<sup>3</sup> and Mustard is 0.03 mg/m<sup>3</sup>.

<b>Table 3-1: Agent AEL level, Stack Limits and Aspirations Times.</b>							
<b>Agent</b>	<b>AEL Levels and Stack Limits (mg/m<sup>3</sup>)</b>						
	<b>GPL</b>	<b>WPL</b>			<b>STEL</b>	<b>IDLH</b>	<b>SEL</b>
<b>GA, GB</b>	1 x 10 <sup>-6</sup> (24 hours)	2 x 10 <sup>-5</sup> (12 hours)	6 x 10 <sup>-5</sup> (4 hours)	6 x 10 <sup>-5</sup> (2 hours)	1 x 10 <sup>-4</sup> 15 minutes	1 x 10 <sup>-1</sup> ≤30 minutes	3 x 10 <sup>-4</sup>
<b>VX</b>	6 x 10 <sup>-7</sup> (24 hours)	6 x 10 <sup>-7</sup> (12 hours)	2 x 10 <sup>-6</sup> (4 hours)	4 x 10 <sup>-6</sup> (2 hours)	1 x 10 <sup>-3</sup> 15 minutes	3 x 10 <sup>-3</sup>	3 x 10 <sup>-4</sup>
<b>H agents</b>	2 x 10 <sup>-5</sup> (12 hours)	2.7 x 10 <sup>-4</sup> (12 hours)	8 x 10 <sup>-4</sup> (4 hours)	1.6 x 10 <sup>-3</sup> (2 hours)	3 x 10 <sup>-3</sup> 15 minutes	7 x 10 <sup>-1</sup>	3 x 10 <sup>-2</sup>
<b>Lewisite</b>	3 x 10 <sup>-3</sup> (12 hours)	3 x 10 <sup>-3</sup> (12 hours)	3 x 10 <sup>-3</sup> (4 hours)	3 x 10 <sup>-3</sup> (2 hours)	3 x 10 <sup>-3</sup> 15 minutes	Not Established	3 x 10 <sup>-2</sup>

#### 4.0 HAZARD CATEGORY AREAS

Definitions of Hazard Category Areas at the CAMDS can be found in Table 4-1.

<b>Table 4-1: Definitions of Hazard Category Areas at the CAMDS Site.</b>	
<b>Hazard Category Area</b>	<b>Activities</b>
<b>A</b>	The toxic processing area supported by the cascade ventilation system designated for probable liquid and vapor agent contamination (for example, munitions processing bay, toxic cubicle).
<b>B</b>	The toxic processing area supported by the cascade ventilation system is designated for possible vapor agent contamination only.
<b>C</b>	The nontoxic work area adjacent to Category A or B areas that is supported by the cascade ventilation system designated for possible low-level vapor agent contamination.
<b>D</b>	The nontoxic work area designation for areas considered uncontaminated.
<b>E</b>	The area designated for a positive pressure, filtered air environment.

#### 5.0 MONITORING EQUIPMENT AND AGENTS MONITORED

The Monitoring Division provides the monitoring support for the CAMDS Site, DCD Perimeter, and Area 10 and TOCDF CAL Laboratory. Before each individual agent campaign the monitoring system is operated in the configuration in which it will be used during the campaign. This is known as baseline operations. The purpose for the baseline is to provide evidence that the whole system will perform within required tolerances and requirements, and to document the configuration of the system at the time of the baseline.

The Monitoring Division has capabilities to monitor for the following five chemical agents using various monitoring equipment, which includes NRT monitors, DAAMS, RTAPS, and M8A1 detectors:

1. GB (Isopropylmethylphosphonofluoridate),
2. VX [O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate],
3. Mustard [bis(2-chloroethyl) sulfide]
4. GA[Ethyl N, N-dimethylphosphoramidate-cyanidate]
5. Lewisite [dichloro-2-chlorovinyl arsine]

### **5.1 Near Real Time Monitors**

The Near Real Time (NRT) Monitors are configured to monitor one or more of the chemical agents being processed at the Site. NRT monitors are used to monitor the operational areas, filters, and stacks. NRT monitors may monitor at the STEL, WPL, SEL, and IDLH concentrations of chemical agents GA, GB, VX, Mustard, and Lewisite.

### **5.2 Depot Area Air Monitoring System**

Depot Area Air Monitoring System (DAAMS) collects air samples to detect chemical agents GA, GB, VX, Mustard, and Lewisite for confirmation of NRT monitor alarms and as primary historical monitors in areas not monitored by NRT monitors. Analysis of DAAMS samples provides confirmation of agent if concentrations are at or above the defined Reporting Limit (RL). Instrumentation used for agent confirmation are the Gas Chromatography/Flame Photometric Detector (GC/FPD) (DAAMS Class I Method) or GC-Mass Selective Detector (GC-MSD).

### **5.3 Real Time Analytical Platform (RTAPS)**

Real Time Analytical Platforms are mobile NRT monitoring stations used in situations where NRT monitoring is required but the location does not have any temporary (fixed) or permanent stations.

### **5.4 Dilution Air Flow Controllers (DAFC)**

Both the NRT monitor and DAAMS use dilution airflow controllers. The purpose of the dilution flow controllers is to inject dry air into the sample stream to prevent the liquid in the sample from condensing in the sampling equipment, keeping the sample above the dew point. The dilution flow controllers are designed such that the flow control device has a feedback signal to a flow meter. This feedback signal causes the ratio of the sample flow to stay constant once the two are locked together. Therefore, the unit compensates for any interruptions in the sample flow and maintains the correct ratio. The agent concentration in the DAAMS tubes is calculated using the volume of sample air, not the dilution air. The same theory of operation holds true with the NRT monitors. The NRT monitors are calibrated disregarding the quantity of dilution air. The dilution air can be considered a carrier for the sample. The agent concentration is based on the volume of the sample. The ratio of air to sample for the DAFC is 10:1.

### **5.5 Backup Equipment**

The function of the NRT monitor is to rapidly detect agent. Should a needed instrument fail, the first response is to troubleshoot and repair it in place. Should the estimated repair time be in excess of 1.5 hours the NRT monitor shall be replaced with an NRT monitor from the contingency stock.

## **6.0 CAMDS MONITORING AREAS**

In the demilitarization plant area, hazard category classifications and personnel occupancy are the factors used to determine monitoring activities. When monitoring is conducted for personnel protection or to assess potential personnel exposure, the monitoring must be sufficient to identify, verify, and quantify the agent. STEL and WPL monitoring is performed in areas of the facility where workers may have a potential exposure to chemical warfare agent.

### **6.1 CAMDS Site Areas**

#### **6.1.1 CWM And Hazardous Waste Process Areas and Airlocks (Hazard Category A and B)**

Toxic and Process areas are potentially contaminated with liquid agent or agent vapor. These areas are monitored using NRT monitors. No confirmation monitoring is necessary because the presence of chemical agent is expected. The agent concentrations determine the Personnel Protective Equipment (PPE) that is required for personnel entry. At times, the monitoring may be enhanced to allow the PPE for specific toxic areas to be reduced to enhance worker mobility. Reduction of PPE requires Safety Officer approval. Enhanced monitoring may include changing the NRT monitors to a more sensitive detection level or by adding DAAMS in order to confirm or deny an NRT alarm.

Toxic and Process area airlocks serve as access/egress points between contaminated areas (agent or other hazardous wastes) and clean work areas. To limit the transfer of hazardous waste from "toxic" areas to "work areas", under normal conditions, items and personnel are cleared through an airlock or egress area. Adherence to written procedures governing the proper egress from areas where hazardous waste is being processed is required. These procedures shall ensure that equipment, clothing, or personnel exiting hazardous waste process areas do not spread hazardous waste outside of these areas. All personnel involved in toxic/process area operations shall be trained in proper egress procedures. Egress procedures shall include both proper NRT monitoring to confirm chemical agent readings, are less than the action level, where required, but also procedures to ensure all types of hazardous waste are not tracked outside the process areas.

#### **6.1.2 Process Support Areas (Hazard Category C)**

The C areas are any rooms, mechanical rooms, and observation corridors that are connected directly via ventilation to hazard category A and B areas. These areas are monitored with NRTs at the STEL and at the WPL level daily.

#### **6.1.3 Non-Toxic Uncontaminated Work Areas (Hazard Category D)**

Within the CAMDS site there are many areas inhabited by workers where non-toxic work operations are taking place. These areas are not under "engineering control" and have little or no potential for vapor contamination. These areas are not normally monitored for agent, however DAAMS only stations will be used to monitor areas adjacent to dilute agent storage areas, the SAF laboratory lunch room and agent contaminated hazardous waste Permitted storage areas (when waste is present) at the 12-hour WPL level

#### **6.1.4 Laboratory Work Areas**

Laboratory Work Areas shall be monitored with NRT and DAAMS stations in accordance with the Appendix A of Permit Attachment 16. Written approval is required from the Executive Secretary to reduce monitoring in any Laboratory Work area.

#### **6.1.5 Positive Pressure Areas**

The Control Module Operations area, Medical Module and Personnel Support Complex are the only areas which have the capability to switch the ventilation system to positive pressure when an agent alarm occurs in an area outside of engineering control. This allows personnel in these areas to perform work, without the need of a mask or protective clothing, if an upset condition exists.



Agent operations do occur in these areas and with positive air pressure there is no potential for vapor contamination.

#### **6.1.6 Filters**

Multiple Bank Carbon Filter units (Appendix 18) provide negative pressure ventilation for potentially contaminated areas throughout the plant.

##### ***Six-Bank HVAC Filters***

**Filter mid-beds** - The filter mid-bed locations (after banks one, two, and four) shall be monitored continuously with DAAMS for Mustard, GB, and VX at the WPL (12 hour) and for any other agents with which the carbon has been potentially contaminated.

**Filter Stack** - NRT monitors shall be used to monitor for each agent being processed in the plant at the STEL (action level 0.5). DAAMS stations continuously monitor the HVAC Filter Stack for GB, VX, and Mustard at the WPL (12 hour).

##### ***CAMDS Laboratory Two-Bank HVAC Filters***

DAAMS shall monitor for GB, GA, VX, Mustard, and Lewisite between charcoal banks 1 and 2, and the Filter Stacks at the WPL (12hour). The Filter exhaust Stacks shall be monitored with NRTs for GB and VX at the STEL (action level 0.5).

#### **6.1.7 MPF Stack**

The MPF Stack is continuously monitored, by both NRT monitors and DAAMS, at the SEL level for all agents being processed in the facility. The SEL provides an early indication of upset conditions, and must be accurately measurable in a timely manner. Staggered NRT monitors are required on the MPF stack for each agent. The two staggered NRT monitors shall have differing columns with two identical NRT monitors for backup. DAAMS are used as confirmation for any NRT alarms above the action level. A Waste Feed Cutoff for the MPF is initiated when an alarm at or above the 0.2 SEL action level is exceeded at the MPF stack.

#### **6.1.8 Life Support System (LSS) Air Connects**

Life Support System (LSS) air is monitored with DAAMS at the WPL (2 Hours) level daily.

#### **6.1.9 Continuous Emission Monitoring System (CEMS)**

The CAMDS Site Continuous Emissions Monitoring System (CEM), non-chemical agent stack monitoring, will be IAW Attachment 17 of this Permit.

### **6.2 Perimeter Monitoring**

The DCD perimeter requires historical monitoring with confirmation monitoring at the GPL level for all chemical agents being processed at the facility or stored in the storage yard. The CAMDS Site provides monitoring and analytical support for the perimeter monitoring. Perimeter Monitoring for a specific agent may only be discontinued if all of the recoverable neat agent, for that specific agent, has been demilitarized.

#### **6.2.1 Perimeter Stations**

There are ten Perimeter Monitoring Stations sampling for GB, VX (24 hour), and Mustard (12 hour) with DAAMS tubes. Each station has a primary, secondary, and tertiary DAAMS tubes for each agent monitored and are analyzed for agent at the GPL. Stations are numbered 901-908 and 910-911. Logbooks documenting all maintenance, inspections and monitoring activities shall be kept current at each station.

#### **6.2.2 GA and Lewisite Monitoring Stations**

GA or Lewisite perimeter monitoring shall be accomplished at the storage igloos with DAAMS stations monitoring at the GPL.

### **7.0 QUALITY CONTROL**

The CAMDS Site monitoring and analytical QC procedures can be found in Attachment 3, of this Permit.

### **8.0 AGENT ALARM NOTIFICATION PROCEDURES AND DOCUMENTATION**

#### **8.1 MPF Stack Alarm For VX, GB or Mustard**

If the NRT monitors alarm at or above 0.2 SEL, the site shall mask, secondary waste processing shall cease, and an automatic waste feed cut-off (AWFCO) shall be initiated for the MPF. Monitoring personnel shall be deployed. DAAMS tubes shall be pulled and analyzed on the stack. If agent is confirmed, processing of secondary waste shall not proceed until CAMDS has received written approval by the Executive Secretary.

#### **8.2 HVAC Filter Stack Alarm for VX, GB, and Mustard**

The HVAC stack NRT monitors alarm at or above 0.5 of the STEL, but the action level is at 0.20 of the STEL. If an NRT monitor reading is at or above the action level of 0.2 STEL, the CMO/EOC shall notify monitoring personnel to investigate the NRT monitor. If the NRT monitor goes into alarm (0.5 Z) than the site shall mask, Monitoring personnel shall be deployed, and DAAMS tubes shall be pulled and analyzed.

If agent is confirmed, normal operations may continue at the facility if a backup HVAC filter is put online and sufficient flow is achieved to support ongoing operations. The HVAC filter system with the confirmed reading shall not be used for operations until the CAMDS has received written approval from the Executive Secretary.

#### **8.3 Workplace Monitoring for VX, GB and Mustard (Categories C and D Areas)**

If an NRT monitor reading is at or above the action level of 0.2 STEL, the CMO/EOC shall notify Monitoring personnel to investigate the NRT monitor. If an NRT monitor alarms at or above 0.5 STEL, the CMO/EOC shall mask the site, Monitoring will respond and verify NRT monitor operation and DAAMS tubes shall be pulled and analyzed.

### **9.0 LIMITING CONDITIONS OF OPERATION (LCOS)**

The monitors identified for a given campaign must be operating at all times and are considered to be Limiting Conditions of Operations (LCOS).

### **10.0 FAILURE TO MONITOR**

All of the monitoring identified in this plan must be operating and in control during processing in a given area or it will be considered a "Missed Monitoring" and shall be reported as such, in writing to the Executive Secretary. The following are exceptions are allowed for all monitors except for the HVAC and MPF Stack.:

1. During campaign change transition periods when monitors are being changed to a new campaign.
2. When a Temporary Change has been approved (see Section 12.0).
3. When there are NRT monitors and DAAMS monitoring at a work area, and one or the

other is off line for maintenance, repair or calibration, it will not be considered a "Missed Monitoring" as long as the co-located monitor is in control. If the NRT monitor is offline or in malfunction for more than one and a half hours, the DAAMS becomes the primary monitor and therefore must be analyzed.

4. When a monitor is off line or out-of-control and processing has ceased, personnel have evacuated the area, or other investigative measures are taken, it will not be considered a "Missed Monitoring". Example: If an NRT monitor is offline or a line challenge has failed and the CMO/EOC has made the area off limits, it will not be considered a missed monitoring because mitigating measures have been taken.

#### **10.1 HVAC and MPF Stack**

Missed monitoring shall be reported for the HVAC stack when the NRT monitoring is offline for more than ten cycles. Missed monitoring shall be reported for the HVAC stack if DAAMS tubes are not continuously monitoring the HVAC stack.

Missed monitoring shall be reported for the MPF stack if any of the conditions required by Section 6.1.7 of this Attachment are not met.

#### **11.0 NRT MONITOR ALARMS AND NOTIFICATION PROCEDURES**

All NRT monitor alarms, which have co-located DAAMS, require analysis of the DAAMS tube(s). Even if the alarm is not confirmed, all DAAMS results must be reported to the CMO/EOC and entered in the DAAMS Log Book. The CAMDS Laboratory will maintain the official record of all DAAMS results.

Data from each NRT monitor is collected and stored in a computer file. These readings may be displayed on demand in the CMO/EOC. Alarm notification is indicated when agent concentrations meets or exceed alarm set points at stations outside of toxic areas or when the NRT monitor is in malfunction.

In the event of an NRT monitor alarm at or above the alarm level or a reading in excess of the action level of 0.2, outside of engineering controls, or in category "C" areas, the CMO/EOC will notify the Monitoring Team Leader or designee and record the information in the CMO/EOC Log book. The Team Leader or designated certified monitoring technician along with one other monitoring person shall respond by going to the location of the NRT monitor that is in alarm.

Monitoring personnel evaluate alarms by observing the chromatogram and troubleshooting for malfunctions, verify the action level set point, and challenging the NRT monitor with an agent standard to ensure that it is operating correctly and pull the associated DAAMS tubes for analysis.

If the alarm is confirmed by DAAMS, appropriate corrective measures shall be taken, and two successive cycles, less than the action level, on the NRT monitor shall be used to determine that operations may resume (not applicable to the MPF stack MDC2 or filters).

#### **12.0 MONITORING PLAN REVIEW AND PERMIT MODIFICATION**

The CAMDS Facility will internally review the Monitoring Plan annually. This Monitoring Plan is a RCRA Permit Controlled document. A Permit modification shall be submitted to the Executive Secretary to request any modifications of this Permit as required by R315-3-4.

##### **12.1 Temporary Changes**

Temporary change is defined as a reduction or addition of the number of monitors and changing of the configuration of agent monitors on a temporary basis by the CAMDS. The Permittee shall notify the Executive Secretary orally of any reduced monitoring applicable to this Attachment prior to implementation.

Temporary changes to Filters, MDC2 ovens and MPF Stack monitoring are not allowed under this Permit unless written authorization is given by the Executive Secretary.

## **12.2 Lessons Learned**

It is important that monitoring personnel have an avenue to share their experiences with their peers and management when there are opportunities to improve on monitoring documentation, interaction with other Divisions, and or monitoring procedures. Lessons learned should be recorded and incorporated into the operation of the Monitoring Branch.

## **13.0 MONITOR/MONITORING STATION LOCATIONS AND REPORTS**

### **13.1 Monitor Locations**

The monitors at the CAMDS Site are placed in locations to maintain minimum distances to the actual sampling point while keeping the equipment out of hazardous areas. Sampling locations remain fixed; however, sample lines may be adjusted to place NRT monitor and DAAMS equipment at different nearby points to support operational requirements. For the actual monitoring locations at the CAMDS, see Appendix A and the associated drawings.

### **13.2 Monitoring Station Database**

The CAMDS Site has established a Monitoring Station Database that contains information on the current status of monitoring stations. This database can be accessed to review real time monitoring data.

### **13.3 Monthly Site Monitoring Plan/Report**

Monitoring Division will prepare a Monthly Site Monitoring Plan (Primary and Secondary Report) for operations at the CAMDS Site, and where applicable. The Monthly Site Monitoring Plan is issued to give the most current monitoring information available. The reports and information shown in Appendices A and B are used as examples only. The Information on Primary and Secondary Monitoring Reports is constantly changing.

The Monthly Site Monitoring Plan reflects the chemical agent monitoring as of the time of the report. Monitoring changes occur as operational requirements change. An up-to-date and accurate Primary and Secondary Monitoring Report shall be generated each month. A copy shall be submitted to the Executive Secretary by e-mail as soon as the report is approved by the CAMDS.

Monitoring changes are processed using AMSCM-OPDC Form 5020-R-E, *Request for Change of Monitoring system*. All requested information must be provided and required signatures obtained before any monitoring changes will be made. An Example of this form is provided in Appendix D. Specific monitoring requirements for new tests and/or processes shall be submitted Executive Secretary for review and approval.

#### **13.3.1 Primary Monitoring Plan/Report**

Primary Monitoring Report is generated from the Monitoring Station Database, and lists all monitoring stations used at the CAMDS Site, DCD perimeter, and Area 10 (Example report, Appendix A). The Primary Monitoring Report is available for review by all personnel through the DCD Network. The Primary Monitoring Report provides the following information:

**Site** - Monitors are in Area 10, the CAMDS, or the Perimeter.

**Station** - Station numbers shall maintain the continuity of sample locations for historical purposes. Once a station number is assigned, it cannot be used again to designate any other location.

**Nomenclature** - Location description of monitored area tied to a building number or activity area.

**Operational Status** - The Operating stations, which are active, are listed with an “A”. Inactive stations are designated with an “I”. These stations are kept in reserve and may be re-activated by a request of the Monitoring Division. Stations that are no longer utilized are not shown in the Monitoring Reports, but shall remain a part of the Monitoring Station Database (designation “P”) records for historical purposes.

**NRT** – Near Real Time monitors, either an ACAMS or an MINCAMS

**NRT Agent** - type of Agent monitored.

**NRT AEL Level** - AEL level of agent monitored.

**DAAMS Agent** - Historical Monitoring.

**DAAMS Sample** - The time that the DAAMS tubes are aspirated.

**DAAMS AEL Level** – AEL level of agent monitored.

**Remarks** – Station specific information.

### 13.3.2 **Secondary Monitoring Report**

The Secondary Monitoring Report is also generated from the Monitoring Station Database, and lists all monitoring stations used at the CAMDS Site, DCD perimeter, and Area 10. Appendix B is an example of a Secondary Monitoring Report. It gives additional information on the monitoring station to include, the corresponding sketch number and the ventilation category of the station. The Secondary Monitoring Report is available for review by all personnel through the DCD Network.

**Station Number** - Station numbers shall maintain the continuity of sample locations for historical purposes. Once a station number is assigned, it cannot be used again to designate any other location.

**Operational Status** – The Operating stations, which are active, are listed with an “A”. Inactive stations are designated with an “I”. These stations are kept in reserve and may be re-activated by a request of the Monitoring Division. Stations that are no longer utilized are not shown in the Monitoring Reports, but shall remain a part of the Monitoring Station Database (designation “P”) records for historical purposes.

**Sample Line Length** - Total length of the sampling line with an accuracy of  $\pm 20$  percent.

**Line Material** - The monitoring line is constructed from this material.

**Floor Plan Sketch Number** - Monitor location (Appendix C)

**Power Type** - Power type is the type of power system used to run the monitors and also if there is emergency back-up power in case of power failure.

**Floor Level of Unit** - The level of the monitors in multi-story buildings.

**Ventilation Category update** - Ventilation Category for each monitored area.

## 14.0 **CAMDS SITE SKETCHES**

Appendix C is a collection of the CAMDS Site sketches showing station locations and Table 14-1 lists locations and sketch numbers.

The sketches contained in Appendix C are specially sized and contain only information pertinent to the Monitoring Plan. These special sketches contain only the information required to clearly and accurately depict the CAMDS Site Monitoring Station locations. Full drawings are available on request.

The sketches contained here have been formatted to allow easy understanding of the sampling point and station numbers are identified in the bubbles at each station location.

Only active and inactive stations are shown on the sketch. Stations, which are permanently inactive, are not shown.

When there are several monitoring lines with the same monitoring station number and different alpha extensions at the same location, then only one bubble with the monitoring station number is shown. An example multiple monitoring lines and only one bubble is monitoring stations 15A, 15B, 15C, and 15D located on the Metal Parts Furnace Stack (Sketch 33-021).

Sample Stations with the same monitoring station number and different alpha extensions, which are at different locations, are all shown on the sketch. Examples of these are Monitoring Stations 5 and 5A. Station 5 is located in the Explosive Containment Cubicle Duct and Station 5A is located in the Explosive Containment Cubicle. They are both shown on the sketch and listed in the Monitoring Location Table on the sketch.

The information provided on the sketches should be used in conjunction with the information provided in the Primary Monitoring Report (Appendix A) and Secondary Monitoring Report (Appendix B) to acquire a detailed description of the Monitoring Station activity and location.

<b>Table 14-1: Index of the sketch numbers and their locations.</b>	
<b>Sketch No.</b>	<b>Location</b>
20000-01	General CAMDS Site
20003-01	Filter Pad
20004-01	CAMDS Site LAB
20005-01	General Purpose Facility, Auxiliary Test Facility, Ventilated Storage Area
20007-01	Personnel Support Complex, Site Medical Facility, Security
20008-02	Material Treatment Facility
20008-04	Explosive Containment Cubicle
20009-02	Toxic Maintenance Facility, Residual Storage Area, Chemical Distribution System
20009-02	Multipurpose Demilitarization Facility/Bulk Item Facility
20009-03	Control Module Operator Monitoring
20009-04	Liquid Incinerator
20009-05	Metal Parts Furnace
20010-01	Equipment Test Facility
20011-01	Brine Drying Area, Chemical Test Facility, Chemical Weapons Convention Trailer
20012-01	Utilities, Safety, Tool Crib, Maintenance
20013-01	Perimeter Monitoring

10001-01	Agent Detection System
20008-03	Cal Lab

## **15.0 PROCEDURES FOR ADDING NEW MONITORING STATIONS**

New monitoring stations may be required to support operations at the CAMDS Site. New monitoring location requirements will be identified using AMSCM-OPDC Form 5020. A redlined copy of the appropriate sketch will be included showing the desired location of the monitor(s).

## **Appendix A**

### **PRIMARY REPORT THE CAMDS Monitoring Plan**



Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
<b>AREA 10</b>									
	1810 ECAR	1810 EQUIPMENT AND CLOTHING AERATION ROOM (RUBBER ROOM)	A			GB, VX, HD	12hrs	WPL	BASE
	1810 G	1810 GAZEBO	A			GB, VX, HD	12hrs	WPL	BASE
	1810 LRE	1810 LUNCH ROOM EAST	A			GB, VX, HD	12hrs	WPL	BASE
	1810 LRW	1810 LUNCH ROOM WEST	A			GB, VX, HD	12hrs	WPL	BASE
	1810 MR	1810 MR MONITORING ROOM	A			GB, VX, HD	12hrs	WPL	BASE
	1810 SS	1810 SMOKE SHACK	A			GB, VX, HD	12hrs	WPL	BASE
<b>CAMDS</b>									
	12	MPF - SHROUD AREA	A	GB, VX, HD	STEL	HD	12hrs	WPL	MPF
	15	MPF - EXHAUST STACK	A			GB, VX, HD	12hrs	WPL	MPF/SECONDARY WASTE
	015A	MPF - EXHAUST STACK	A	GB, VX, HD	SEL				MPF/SECONDARY WASTE
	015B	MPF - EXHAUST STACK	A	GB, VX, HD	SEL				MPF/SECONDARY WASTE
	015C	MPF - EXHAUST STACK	A	GB, VX, HD	SEL				MPF/SECONDARY WASTE
	015D	MPF - EXHAUST STACK	A	GB, VX, HD	SEL				MPF/SECONDARY WASTE
	17	MPF - COOLING BAY WEST	A	GB, VX, HD	STEL	HD/GB/VX	12	WPL	MPF/SECONDARY WASTE NRT monitor is on call. DAAMS: Continuous monitoring for agents being processed in the furnace
	20	MPF - DISCHARGE CANOPY	A	GB, VX, HD	STEL				MPF/SECONDARY WASTE

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	28	TMF - TOXIC MAINTENANCE FACILITY (NOT REMOTED)	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	35	BIF - DRAIN AREA	A	GB, VX, HD	STEL				MPF - ON CALL
	71	LIFE SUPPORT SYSTEM - SEGREGATOR	A			GB, VX, HD	2hrs	WPL	BASE
	72	LSS AIR - EXPLOSIVE CONTAINMENT CUB	A			GB, VX, HD	2hrs	WPL	BASE
	73	ADS LIFE SUPPORT SYSTEM AIR	A			GB, VX, HD	2hrs	WPL	BASE
	78	LSS-ETF	A			GB, VX, HD	2hrs	WPL	BASE
	80	MUNITIONS HOLD AREA	A	HD	STEL	HD	12hrs	WPL	SECONDARY WASTE
	080A	MHA - SPORT	A	HD	STEL				SECONDARY WASTE
	092/280	MTF - SPORT AIRLOCK	A	GB	STEL				MDC 2
	162	CAMDS LAB - FILTER 7 STACK	A	GB, VX	STEL	GB, VX, HD, L	12hrs	WPL	BASE
	163	CAMDS LAB FILTER 7 BETWEEN CHARCOAL	A			GB, VX, HD, L	12hrs	WPL	BASE
	184	CAMDS LAB - EAST LAB	A	GB	STEL	GB	12hrs	WPL	BASE
	184A	CAMDS LAB - EAST LAB	A	VX	STEL	VX	12hrs	WPL	BASE
	184B	CAMDS LAB - EAST LAB	A	HD	STEL	HD	12hrs	WPL	BASE
	185	CAMDS LAB - WEST LAB	A			GB, VX, HD	12hrs	WPL	BASE

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	20H	MPF - DISCHARGE CANOPY	A	GB, VX, HD	STEL				MPF / HD Project
	236	MTF - SHOWER	A	GB, VX, HD	STEL				MDC2
	236D	MTF - DOFFING ROOM	A	GB, VX, HD	STEL				MDC2
	237	MTF - LSS AIR	A			GB, VX, HD	2hrs	WPL	MDC2
	238	MTF - CONTROL ROOM	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	MDC2
	279	MTF MATERIAL DECONTAMINATE AREA	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	MDC2
	280A	MDC OUTLET DUCT	A			VX	12hrs	WPL	MDC - ON CALL
	281	RESIDUAL STORAGE AREA (REMOTED)	A	GB, VX, HD	STEL				HD Project
	301	CAMDS LAB - WEST CENTER LAB	A	VX	STEL	VX	12hrs	WPL	BASE
	350	MDF - MONITORING AIRLOCK	A	GB, VX, HD	STEL				HD Project
	351	MDF - LOADING AREA	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	HD Project
	352	MDF - TOXIC UNPACK LSS AIR	A			GB, VX, HD	2hrs	WPL	HD Project
	353	MDF - SHOWER WEST	A	GB, VX, HD	STEL				MPF
	354	MDF - AIRLOCK	A	GB, VX, HD	STEL				HD Project
	356	CHARGE CAR AREA	A	GB, VX, HD	STEL				HD Project
	357	MDF - HYDRAULIC ROOM	A			GB, VX, HD	12hrs	WPL	HD Project
	358	MDF - DOFFING ROOM WEST	A	GB, VX, HD	STEL				HD Project

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	361	MDF - PROCESS AREA LSS AIR	A			GB, VX, HD	2hrs	WPL	HD Project
	363	MDF - CHARGE CAR LSS AIR	A			GB, VX, HD	2hrs	WPL	HD Project
	366	MDF - DOFFING ROOM EAST	A	GB, VX, HD	STEL				HD Project
	405	FILTER 10 - STACK	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	407	FILTER 9 - STACK	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	408	FILTER 9 - BETWEEN BANK 1 & 2	A			GB, VX, HD	12hrs	WPL	BASE
	410	FILTER 6 - MIDBED	A			GB, VX, HD, L	12hrs	WPL	BASE
	411	FILTER 19 - STACK	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	412	FILTER 19 - BETWEEN BANK 1 & 2 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	413	FILTER 6 - STACK	A	GB, VX	STEL	GB, VX, HD, L	12hrs	WPL	BASE
	414	FILTER 10 - BETWEEN BANK 1 & ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	415	FILTER 10 - BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	416	FILTER 10 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	428	FILTER 9 - BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	429	FILTER 9 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	430	FILTER 19 - BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	431	FILTER 19 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	499	LSS AIR PURIFIER UNIT	A			GB, VX, HD	12hrs	WPL	BASE
	513	CAMDS LAB - GC LAB	A	GB	STEL	GB, VX, HD	12hrs	WPL	BASE
	513A	CAMDS LAB - GC LAB	A	GB	STEL				BASE
	525	PSC LAUNDRY VENT SYSTEM FILTER INLET	A			GB, VX, HD	2hrs	WPL	BASE
	526	PSC LAUNDRY VENT SYSTEM FILTER OUTLET	A			GB, VX, HD	2hrs	WPL	BASE
	530	CAMDS LAB - AGENT ROOM WEST HOOD	A	GB	STEL	GB	12hrs	WPL	BASE
	531	CAMDS LAB - AGENT ROOM WEST HOOD	A	VX	STEL	VX	12hrs	WPL	BASE
	532	CAMDS LAB - AGENT ROOM WEST HOOD	A	HD	STEL	HD	12hrs	WPL	BASE
	534	CAMDS LAB - HAZARDOUS WASTE (NOT REMOTED)	A	GB	STEL				BASE On Call
	534A	CAMDS LAB - HAZARDOUS WASTE (NOT REMOTED)	A	VX	STEL				BASE On Call
	546	FILTER 20 - STACK	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	547	FILTER 20 - BETWEEN BANK 1 & 2 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	548	FILTER 20 - BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	549	FILTER 20 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	550	FILTER 21 - STACK	A	GB, VX, HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	551	FILTER 21 - BETWEEN BANK 1 & 2 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	552	FILTER 21 - BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	553	FILTER 21 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	554	FILTER 22 - STACK	A	GB, VX HD	STEL	GB, VX, HD	12hrs	WPL	BASE
	555	FILTER 22 - BETWEEN BANK 1 & 2 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	556	FILTER 22 BETWEEN BANK 2 & 3 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	557	FILTER 22 - BETWEEN BANK 4 & 5 ROTARY	A			GB, VX, HD	12hrs	WPL	BASE
	569	MPT PROCESS DUCT SOUTH	A			HD	2hrs	WPL	3X CTF
	575	FILTER 12 - STACK	A	GB,VX	STEL	GB, VX, HD, L	12hrs	WPL	BASE
	576	FILTER 12 - MIDBED	A			GB, VX, HD, L	12hrs	WPL	BASE
	706	FILTER 5 - MIDBED	A			GB, VX, HD, L	12hrs	WPL	BASE
	707	FILTER 5 - STACK	A	GB,VX	STEL	GB, VX, HD, L	12hrs	WPL	BASE
	715	CTF - GLOVE BOX	A			HD	12hrs	WPL	HD Project
	717	FILTER FARM MANIFOLD DUCT NORTH	A	VX	STEL	VX	12hrs	WPL	MDC2
	747G	MDC2B - MONITORING ROOM	I	VX	STEL	VX	12hrs	WPL	MDC2B
	748G	MDC2B - DOFFING ROOM	I	GB	STEL				MDC2B
	749G	MDC2B - SHOWER	I	GB	STEL				MDC2B
	751G	MDC2 - DUCT	I	GB	STEL	GB	12hrs	WPL	MDC2B
	752G	MDC2B - AIRLOCK	I	GB	STEL				MDC2B
	753G	MDC2B - OVEN	I	GB	STEL				MDC2B

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	754	MDC2B - LSS AIR	I			GB	2hrs	WPL	MDC2
	755	MPF STAGING AREA	A			GB,VX,HD	12hrs	WPL	HD Project
	756G	MDC2 B - OVEN DUCT	I	GB	STEL				MDC2B
	757	RESIDUAL STORAGE AREA - SHOWER	A	GB,VX, HD	STEL				HD Project
	758	RESIDUAL STORAGE AREA - DOFFING ROOM	A	GB,VX, HD	STEL				HD Project
	759	RESIDUAL STORAGE AREA - SORTING TABLE	A	GB,VX, HD	STEL				HD Project
	760	RESIDUAL STORAGE AREA - MONITORING ROOM (REMOTED)	A	GB,VX, HD	STEL	GB,VX,HD	12hrs	STEL	HD Project
	761	RESIDUAL STORAGE AIRLOCK	A	GB,VX, HD	STEL				HD Project
	762	RESIDUAL STORAGE HEAD SPEACE	A	GB,VX, HD	STEL				HD Project
	763	RESIDUAL STORAGE LSS AIR	A			GB,VX,HD	12hrs	STEL	HD Project
	808	ETF LOADED PALLETS	A	GB,VX, HD	STEL	GB,VX,HD	12hrs	STEL	HD Project
<b>DCD</b>									
	901	PERIMETER - STATION 1	A			GB, VX, HD	12hrs	GPL	BASE
	902	PERIMETER - STATION 2	A			GB, VX, HD	12hrs	GPL	BASE
	903	PERIMETER - STATION 3	A			GB, VX, HD	12hrs	GPL	BASE
	904	PERIMETER - STATION 4	A			GB, VX, HD	12hrs	GPL	BASE
	905	PERIMETER - STATION 5	A			GB, VX, HD	12hrs	GPL	BASE

Site	Station	Nomenclature	Operational Status	NRT Agent	NRT AEL Level	DAAMS Agent	DAAMS Sample Duration Time	DAAMS AEL Level	Remarks
	906	PERIMETER - STATION 6	A			GB, VX, HD	12hrs	GPL	BASE
	907	PERIMETER - STATION 7	A			GB, VX, HD	12hrs	GPL	BASE
	908	PERIMETER - STATION 8	A			GB, VX, HD	12hrs	GPL	BASE
	910	PERIMETER - STATION 10	A			GB, VX, HD	12hrs	GPL	BASE
	911	PERIMETER - STATION 11	A			GB, VX, HD	12hrs	GPL	BASE
<b>TOCDF</b>									
	982	ROOM 114, CAL	A			HD	12hrs	WPL	TOCDF SUPPORT
	984	ROOM 113, CAL	A			HD	12hrs	WPL	TOCDF SUPPORT



## **Appendix B**

### **SECONDARY REPORT THE CAMDS Monitoring Plan**

Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
<b>AREA 10</b>											
	1810 ECAR	1810 EQUIPMENT AND CLOTHING AERATION ROOM (RUBBER ROOM)	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
	1810 G	1810 GAZEBO	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
	1810 LRE	1810 LUNCH ROOM EAST	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
	1810 LRW	1810 LUNCH ROOM WEST	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
	1810 MR	1810 MR MONITORING ROOM	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
	1810 SS	1810 SMOKE SHACK	A	DAAM	20	Teflon	YES	N/A	COM	N/A	
<b>CAMDS</b>											
	12	MPF - SHROUD AREA	A		30	Teflon	YES	33-021	COM/EMER	FIRST	C
	15	MPF - EXHAUST STACK	A		10	Teflon	YES	33-021	COM/EMER	SECOND	C
	0.625	MPF - EXHAUST STACK	A		2	Teflon	YES	33-021	COM/EMER	SECOND	C
	015B	MPF - EXHAUST STACK	A		6	Teflon	YES	33-021	COM/EMER	SECOND	C
	015C	MPF - EXHAUST	A		8	Teflon	YES	33-021	COM/EMER	SECOND	C
	015D	MPF - EXHAUST STACK	A		4	Teflon	YES	33-021	COM/EMER	SECOND	C
	17	MPF - COOLING BAY WEST	A		5	Teflon	YES	33-021	COM/EMER	FIRST	D
	20	MPF - DISCHARGE CANOPY	A		40	Teflon	YES	33-021	COM/EMER	FIRST	C
	28	TMF - TOXIC MAINTENANCE FACILITY (NR*)	A		25	Teflon	YES	33-017	COM/EMER	FIRST	C
	35	BIF - DRAIN AREA	A		15	Teflon	YES	33-018	COM/EMER	FIRST	A
	71	LIFE SUPPORT SYSTEM - SEGREGATOR	A		10	Teflon	YES	33-016	COM/EMER	FIRST	D
	72	LSS AIR - EXPLOSIVE CONTAINMENT CUB	A		10	Teflon	YES	33-016	COM/EMER	FIRST	D

Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
	73	ADS LIFE SUPPORT SYSTEM AIR	A		22	Teflon	YES	33-023	COM/EMER	FIRST	D
	78	LSS-ETF	A		15	Teflon	YES	33-022	COM/EMER	FIRST	C
	80	MUNITIONS HOLD AREA	A		30	Teflon	YES	12359	COM/EMER	FIRST	A
	080A	MHA - SPORT	A		30	Teflon	YES	12359	COM/EMER	FIRST	B
	092/280	MTF - SPORT AIRLOCK	A		30	Teflon	YES	33-015	COM/EMER	FIRST	C
	162	CAMDS LAB - FILTER 7 STACK	A		45	Teflon	YES	12359	COM/EMER	FIRST	C
	163	CAMDS LAB FILTER 7 BETWEEN CHARCOAL	A		55	Teflon	YES	12359	COM/EMER	FIRST	B
	184	CAMDS LAB - EAST LAB	A		55	Teflon	YES	12389	COM/EMER	FIRST	C
	184A	CAMDS LAB - EAST LAB	A		60	Teflon	YES	12389	COM/EMER	FIRST	C
	184B	CAMDS LAB - EAST LAB	A		60	Teflon	YES	12389	COM/EMER	FIRST	C
	185	CAMDS LAB - WEST LAB	A		50	Teflon	YES	38716	COM/EMER	FIRST	C
	20H	MPF - DISCHARGE CANOPY	A		40	Teflon	YES	33-021	COM/EMER	FIRST	C
	236	MTF - SHOWER	A		15	Teflon	YES	33-015	COM/EMER	FIRST	B
	236D	MTF - DOFFING ROOM	A		30	Teflon	YES	33-015	COM/EMER	FIRST	B
	237	MTF - LSS AIR	A		15	Teflon	YES	33-015	COM/EMER	FIRST	E
	238	MTF - CONTROL ROOM	A		40	Teflon	YES	33-015	COM/EMER	FIRST	C
	279	MTF MATERIAL DECONTOXIC AREA	A		65	Teflon	YES	33-015	COM/EMER	FIRST	B
	280A	MDC OUTLET DUCT	A		75	Teflon	YES	33-015	COM/EMER	FIRST	B
	281	RESIDUAL STORAGE AREA (R*)	A		25	Teflon	YES	33-017	COM/EMER	FIRST	B
	301	CAMDS LAB - WEST CENTER LAB	A		40	Teflon	YES	12389	COM/EMER	FIRST	C
	350	MDF - MONITORING AIRLOCK	A		10	Teflon	YES	33-018	COM/EMER	FIRST	B
	351	MDF - LOADING AREA	A		30	Teflon	YES	33-018	COM/EMER	FIRST	B
	352	MDF - TOXIC UNPACK LSS AIR	A		20	Teflon	YES	33-018	COM/EMER	FIRST	E
	353	MDF - SHOWER WEST	A		52	Teflon	YES	33-018	COM/EMER	FIRST	B
	354	MDF - AIRLOCK	A		55	Teflon	YES	33-018	COM/EMER	FIRST	A

Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
	356	CHARGE CAR AREA	A		75	Teflon	YES	33-018	COM/EMER	FIRST	C
	357	MDF - HYDRAULIC ROOM	A		20	Teflon	YES	33-018	COM/EMER	FIRST	C
	358	MDF - DOFFING ROOM WEST	A		50	Teflon	YES	33-018	COM/EMER	FIRST	B
	361	MDF - PROCESS AREA LSS AIR	A		22	Teflon	YES	33-018	COM/EMER	FIRST	E
	363	MDF - CHARGE CAR LSS AIR	A		9	Teflon	YES	33-018	COM/EMER	FIRST	C
	366	MDF - DOFFING ROOM EAST	A		20	Teflon	YES	33-018	COM/EMER	FIRST	B
	405	FILTER 10 - STACK	A		30	Teflon	YES	12359	COM/EMER	FIRST	C
	407	FILTER 9 - STACK	A		50	Teflon	YES	12359	COM/EMER	FIRST	C
	408	FILTER 9 - BETWEEN BANK 1 & 2	A		35	Teflon	YES	12359	COM/EMER	FIRST	B
	410	FILTER 6 - MIDBED	A		35	Teflon	YES	12359	COM/EMER	FIRST	B
	411	FILTER 19 - STACK	A		30	Teflon	YES	12359	COM/EMER	FIRST	C
	412	FILTER 19 - BETWEEN BANK 1 & 2 ROTARY	A		25	Teflon	YES	12359	COM/EMER	FIRST	B
	413	FILTER 6 - STACK	A		20	Teflon	YES	12359	COM/EMER	FIRST	C
	414	FILTER 10 - BETWEEN BANK 1 & ROTARY	A		35	Teflon	YES	12359	COM/EMER	FIRST	B
	415	FILTER 10 - BETWEEN BANK 2 & 3 ROTARY	A		45	Teflon	YES	12359	COM/EMER	FIRST	B
	416	FILTER 10 - BETWEEN BANK 4 & 5 ROTARY	A		55	Teflon	YES	12359	COM/EMER	FIRST	B
	428	FILTER 9 - BETWEEN BANK 2 & 3 ROTARY	A		30	Teflon	YES	12359	COM/EMER	FIRST	B
	429	FILTER 9 - BETWEEN BANK 4 & 5 ROTARY	A		40	Teflon	YES	12359	COM/EMER	FIRST	B
	430	FILTER 19 - BETWEEN BANK 2 & 3 ROTARY	A		35	Teflon	YES	12359	COM/EMER	FIRST	B
	431	FILTER 19 - BETWEEN BANK 4 & 5 ROTARY	A		45	Teflon	YES	12359	COM/EMER	FIRST	B
	499	LSS AIR PURIFIER UNIT	A		20	Teflon	YES	33-024	COM/EMER	FIRST	D
	513	CAMDS LAB - GC LAB	A		50	Teflon	YES	12389	COM/EMER	FIRST	D

Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
	513A	CAMDS LAB - GC LAB	A		50	Teflon	YES	12389	COM/EMER	FIRST	C
	525	PSC LAUNDRY VENT SYSTEM FILTER INLET	A		65	Teflon	YES	33-014	COM/EMER	FIRST	D
	526	PSC LAUNDRY VENT SYSTEM FILTER OUTLET	A		65	Teflon	YES	33-014	COM/EMER	FIRST	D
	530	CAMDS LAB - AGENT ROOM WEST HOOD	A		50	Teflon	YES	12389	COM/EMER	FIRST	B
	531	CAMDS LAB - AGENT ROOM WEST HOOD	A		48	Teflon	YES	12389	COM/EMER	FIRST	B
	532	CAMDS LAB - AGENT ROOM WEST HOOD	A		48	Teflon	YES	12389	COM/EMER	FIRST	B
	534	CAMDS LAB - HAZARDOUS WASTE (NR*)	A		50	Teflon	YES	12389	COM/EMER	FIRST	B
	534A	CAMDS LAB - HAZARDOUS WASTE (NR*)	A		50	Teflon	YES	12389	COM/EMER	FIRST	C
	546	FILTER 20 - STACK	A		35	Teflon	YES	12359	COM/EMER	FIRST	C
	547	FILTER 20 - BETWEEN BANK 1 & 2 ROTARY	A		75	Teflon	YES	12359	COM/EMER	FIRST	B
	548	FILTER 20 - BETWEEN BANK 2 & 3 ROTARY	A		70	Teflon	YES	12359	COM/EMER	FIRST	B
	549	FILTER 20 - BETWEEN BANK 4 & 5 ROTARY	A		80	Teflon	YES	12359	COM/EMER	FIRST	B
	550	FILTER 21 - STACK	A		40	Teflon	YES	12359	COM/EMER	FIRST	C
	551	FILTER 21 - BETWEEN BANK 1 & 2 ROTARY	A		45	Teflon	YES	12359	COM/EMER	FIRST	B
	552	FILTER 21 - BETWEEN BANK 2 & 3 ROTARY	A		50	Teflon	YES	12359	COM/EMER	FIRST	B
	553	FILTER 21 - BETWEEN BANK 4 & 5 ROTARY	A		60	Teflon	YES	12359	COM/EMER	FIRST	B
	554	FILTER 22 - STACK	A		40	Teflon	YES	12359	COM/EMER	FIRST	C
	555	FILTER 22 - BETWEEN BANK 1 & 2 ROTARY	A		45	Teflon	YES	12359	COM/EMER	FIRST	B

Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
	556	FILTER 22 BETWEEN BANK 2 & 3 ROTARY	A		50	Teflon	YES	12359	COM/EMER	FIRST	B
	557	FILTER 22 - BETWEEN BANK 4 & 5 ROTARY	A		60	Teflon	YES	38686	COM/EMER	FIRST	B
	569	MPT PROCESS DUCT SOUTH	A		60	Y	YES	33-023	COM/EMER	FIRST	C
	575	FILTER 12 - STACK	A		50	Teflon	YES	12359	COM/EMER	FIRST	C
	576	FILTER 12 - MIDBED	A		65	Teflon	YES	12359	COM/EMER	FIRST	B
	706	FILTER 5 - MIDBED	A		30	Teflon	YES	12359	COM/EMER	FIRST	B
	707	FILTER 5 - STACK	A		20	Teflon	YES	12359	COM/EMER	FIRST	C
	715	CTF - GLOVE BOX	A		45	Teflon	YES	33-023	COM/EMER	FIRST	C
	717	FILTER FARM MANIFOLD DUCT NORTH	A		40	Teflon	YES	12359	COM/EMER	FIRST	B
	747G	MDC2B - MONITORING ROOM	A		20	Teflon	YES				
	748G	MDC2B - DOFFING ROOM	A		25	Teflon	YES				
	749G	MDC2B - SHOWER	A		25	Teflon	YES				
	751G	MDC2 - DUCT	A		65	Teflon	YES				
	752G	MDC2B - AIRLOCK	A		40	Teflon	YES				
	753G	MDC2B - OVEN	A		60	Teflon	YES				
	754	MDC2B - LSS AIR	A		10	Teflon	YES	33-016	COM/EMER	FIRST	D
	755	MPF STAGING AREA	A			Teflon	YES		COM/EMER	FIRST	
	756G	MDC2 B - OVEN DUCT	A		65	Teflon	YES				
	757	RESIDUAL STORAGE AREA - SHOWER	A								
	758	RESIDUAL STORAGE AREA DOFFING ROOM	A								
	759	RESIDUAL STORAGE AREA SORTING TABLE	A								
	760	RESIDUAL STORAGE AREA - MONITORING ROOM (R*)	A								
DCD											

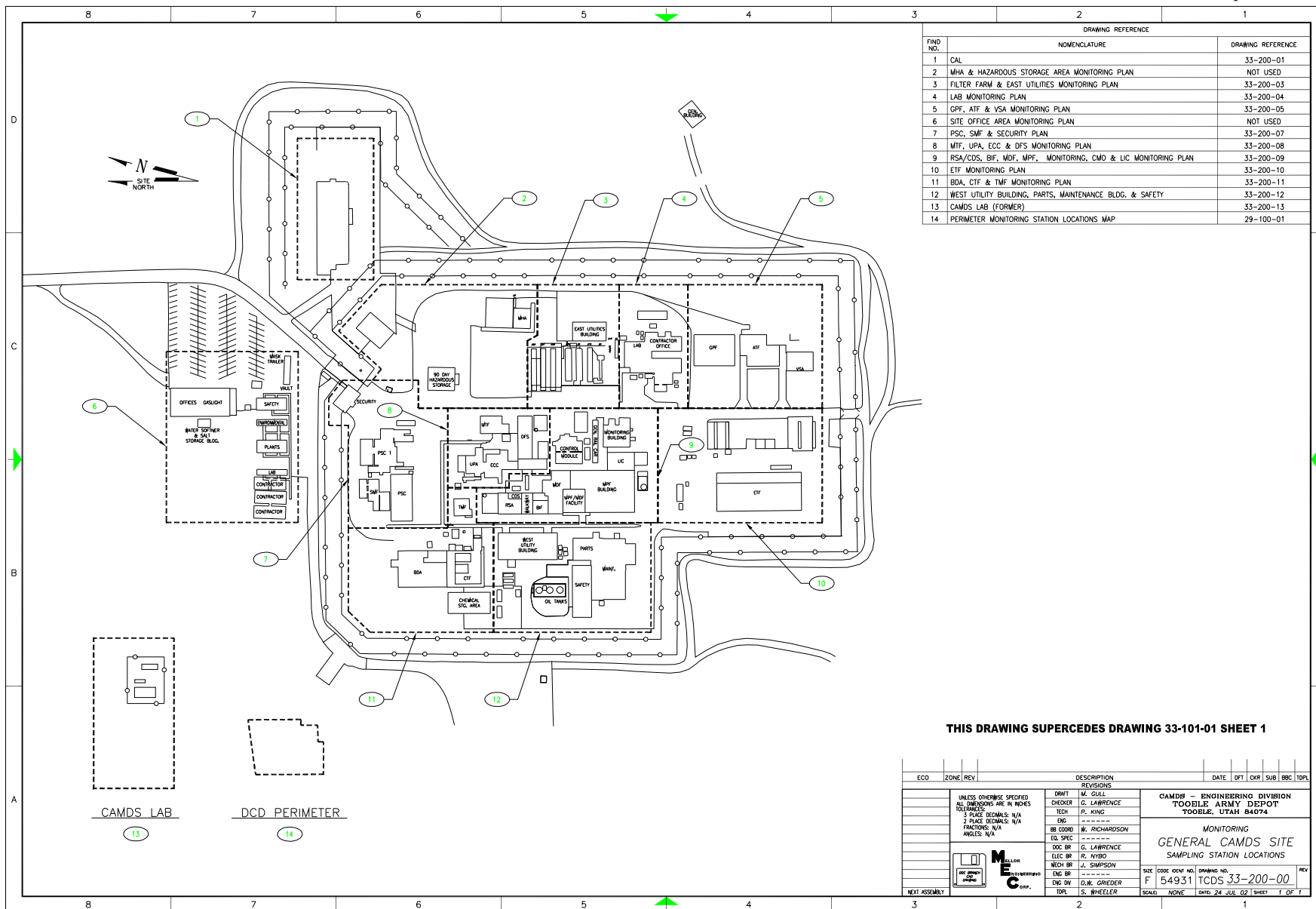
Site	Station	Nomenclature	Operational Status	Annunciator Panel	Sample Line Length (ft)	Line Material	Heat Traced	Floor Plan Sketch Number	Power Type	Floor Level of Unit	Ventilation Category
	901	Perimeter - Station 1	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	902	Perimeter - Station 2	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	903	Perimeter - Station 3	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	904	Perimeter - Station 4	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	905	Perimeter - Station 5	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	906	Perimeter - Station 6	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	907	Perimeter - Station 7	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	908	Perimeter - Station 8	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	910	Perimeter - Station 10	A		15	Teflon	Yes	33-026	COM/EMER	First	E
	911	Perimeter - Station 11	A		15	Teflon	Yes	33-026	COM/EMER	First	E
<b>TOCDF</b>											
	982	Room 114 - CAL LAB	A		15	Teflon	Yes	33-027	COM/EMER	First	B
	984	Room 1134 - CAL LAB	A		15	Teflon	Yes	33-028	COM/EMER	First	B
<b>Note</b> (NR*) = Not Remoted (R*) = Remoted											

## **Appendix C**

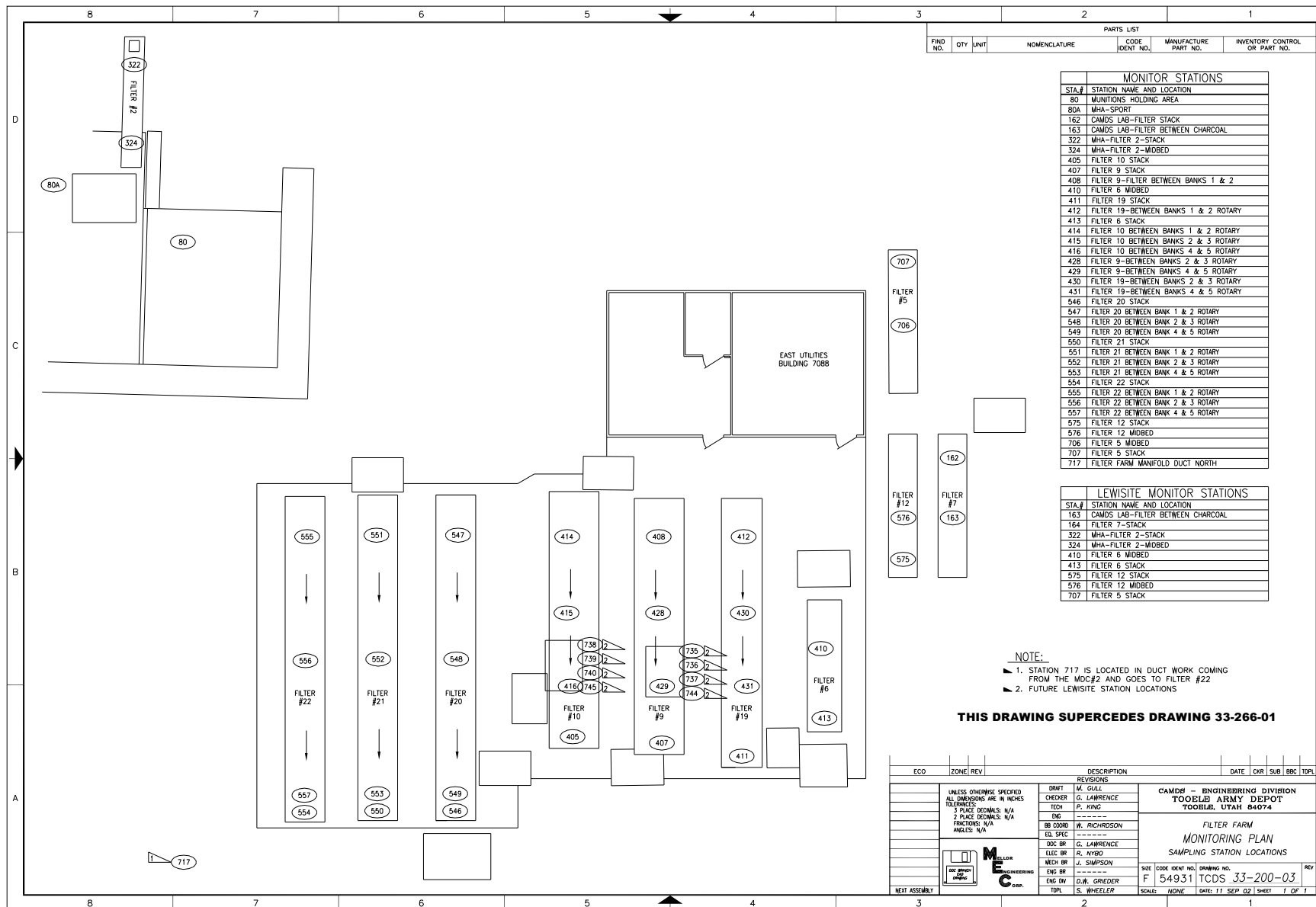
### **SITE SKETCHES WITH MONITORING STATION LOCATIONS**

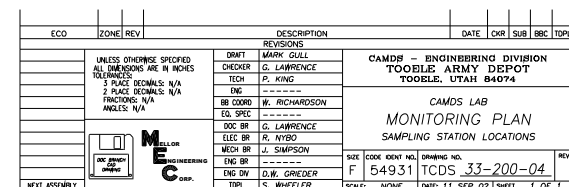


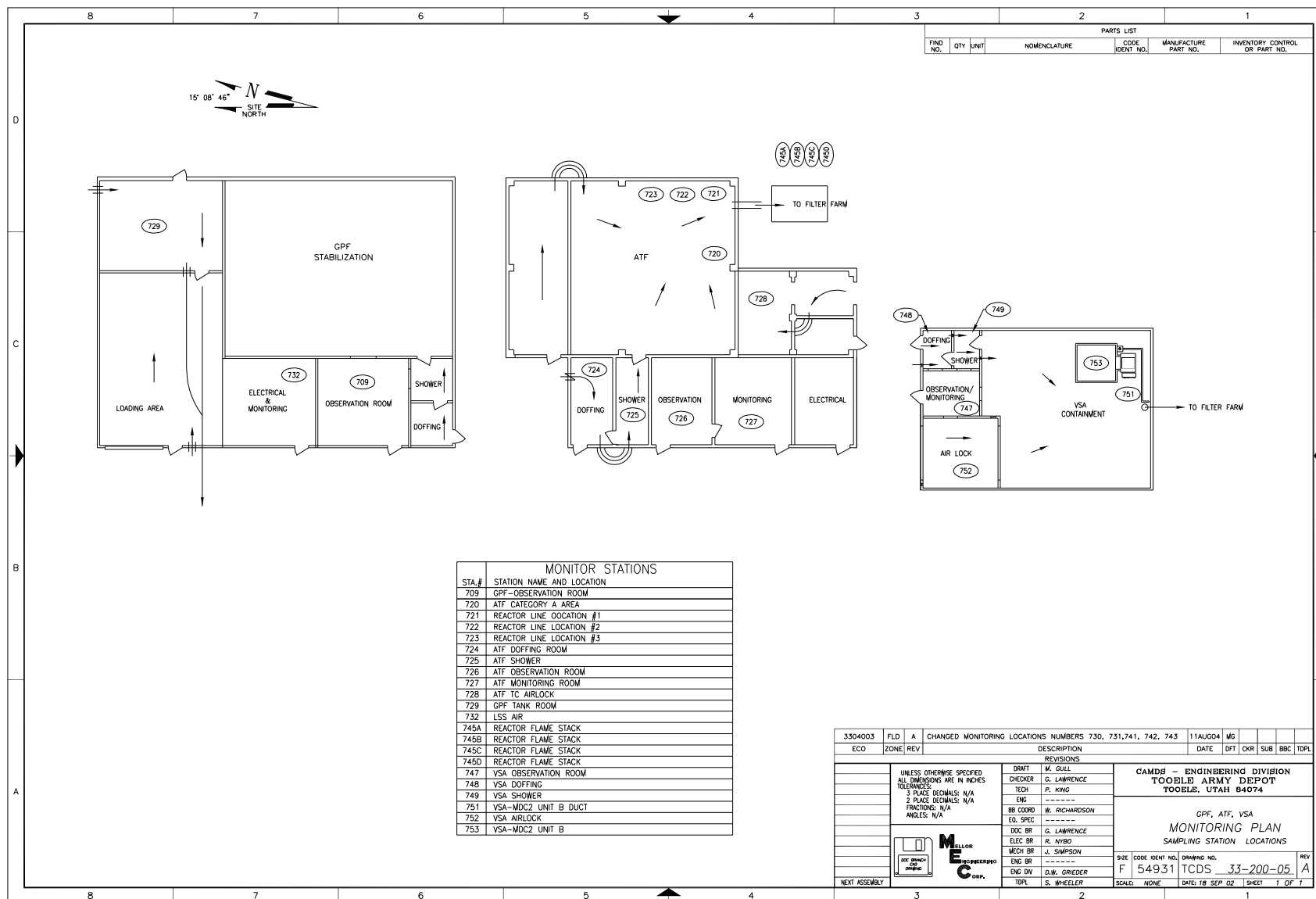
CAMDS  
Attachment 16  
Site Monitoring Plan  
April 2008

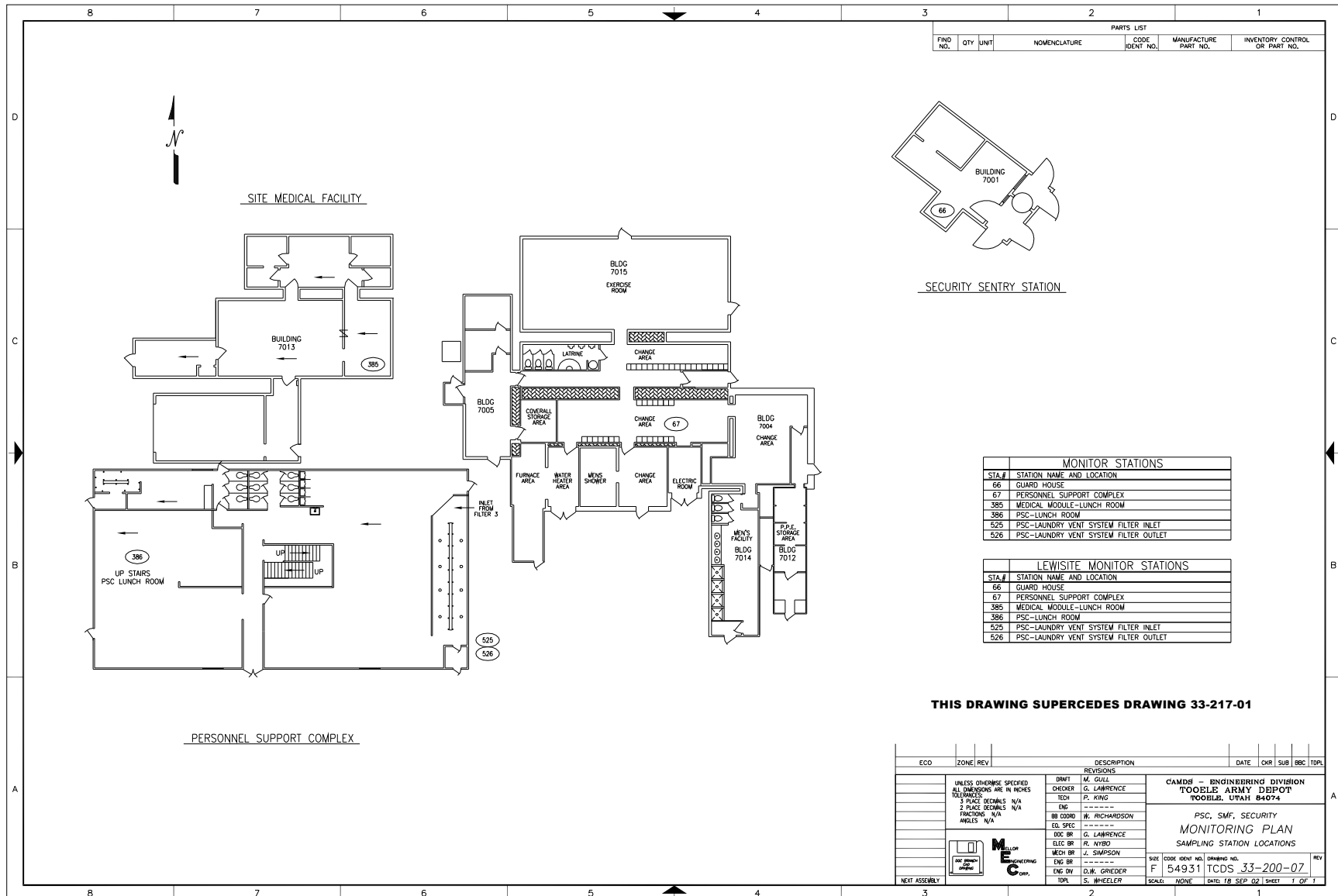


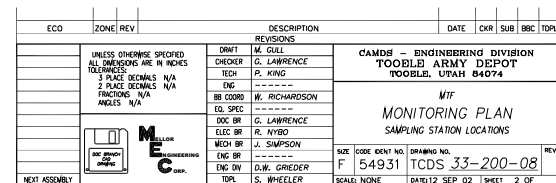
CAMDS  
Attachment 16  
Site Monitoring Plan  
April 2008

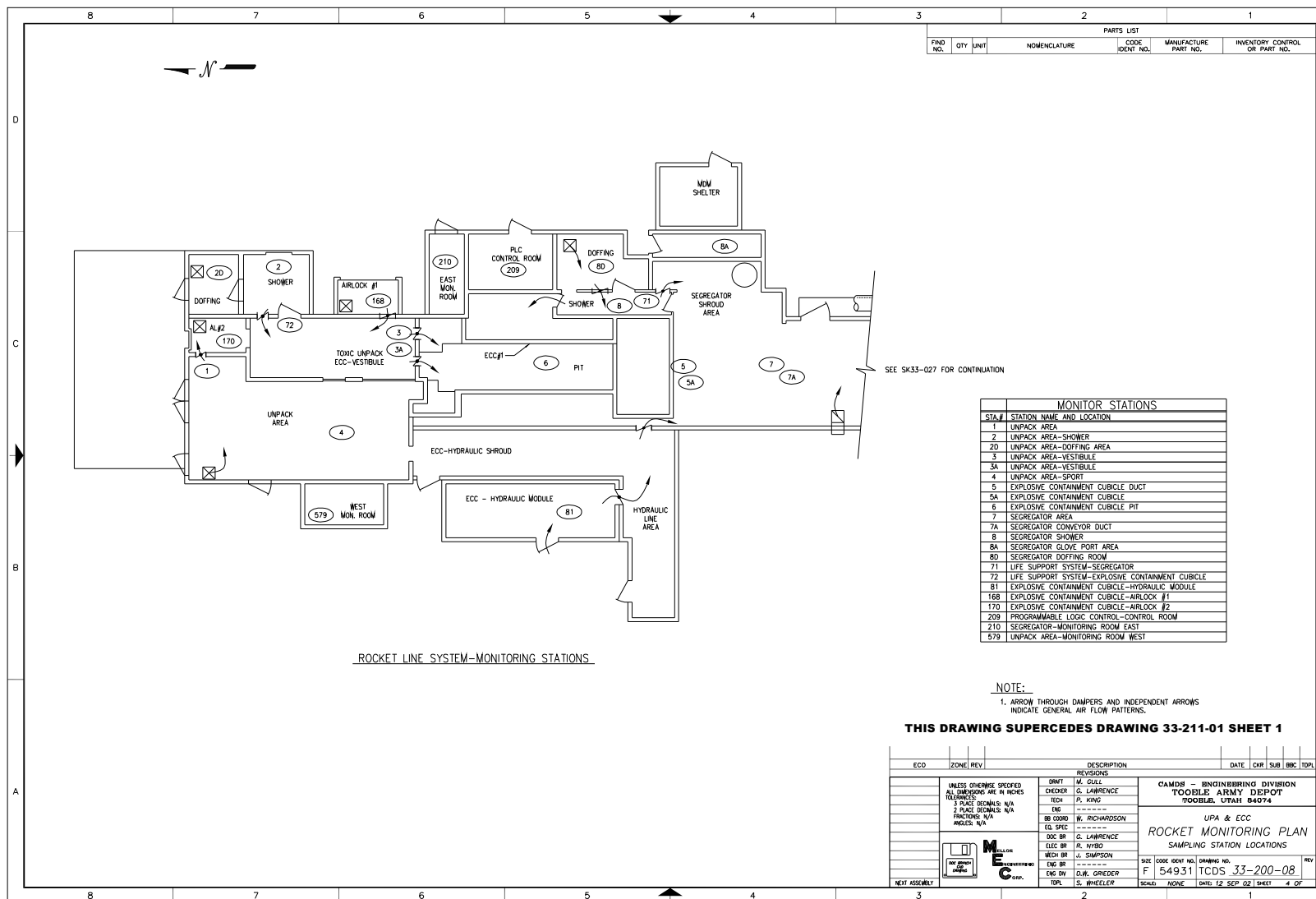


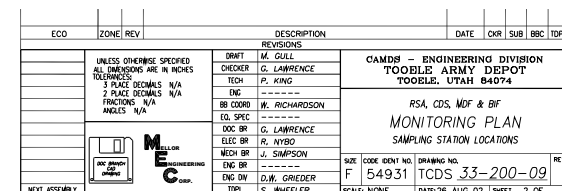




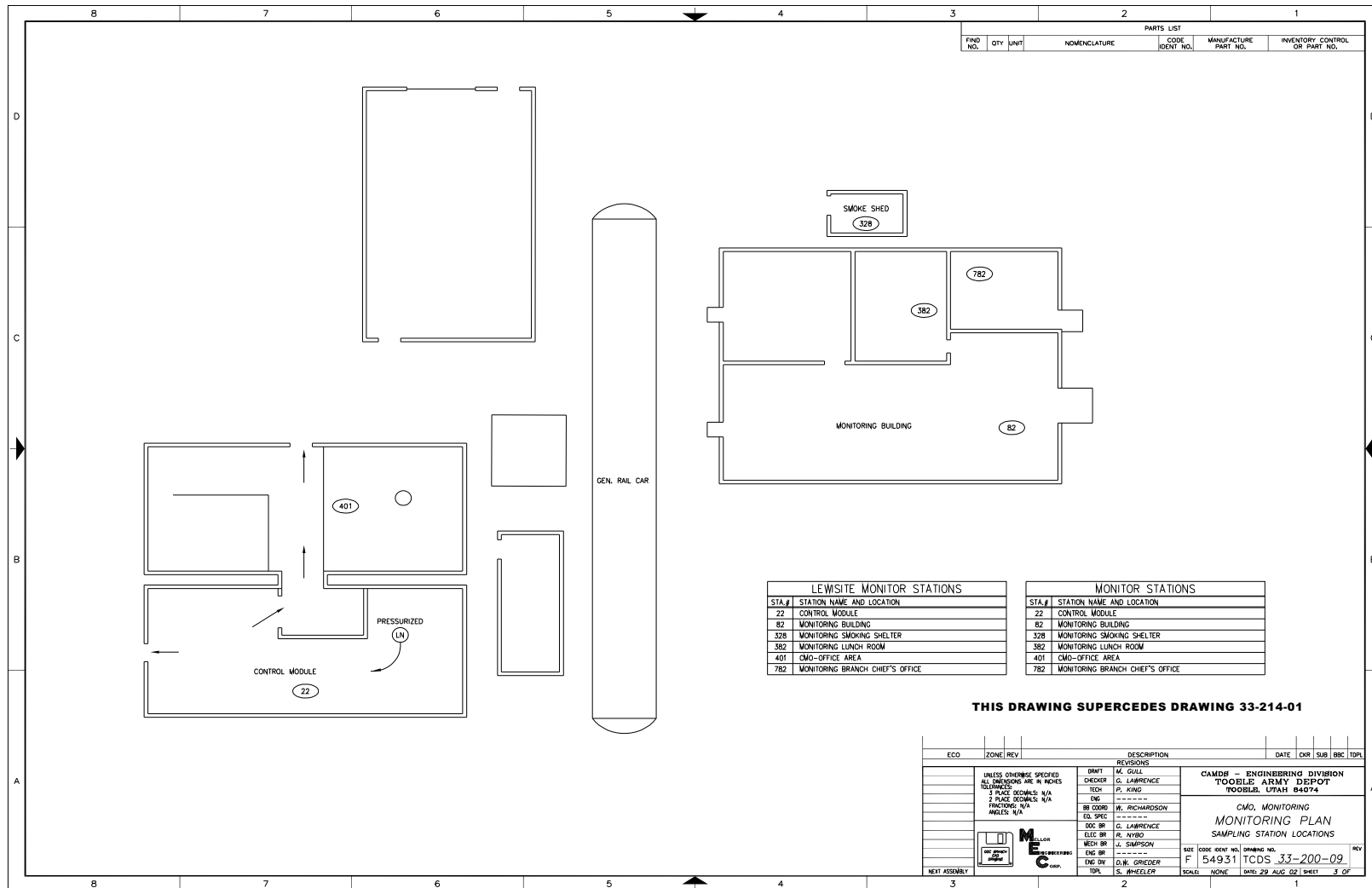




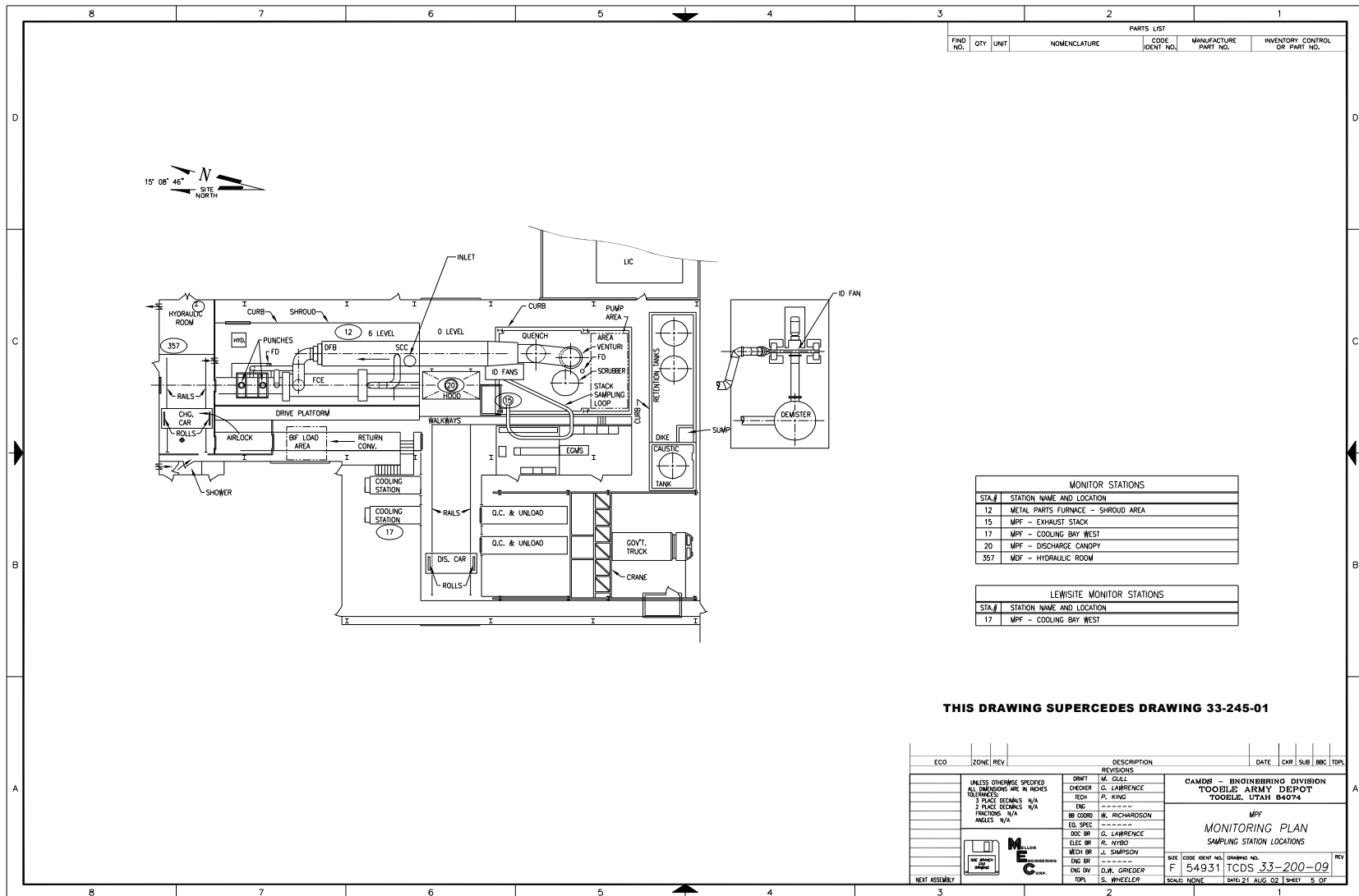






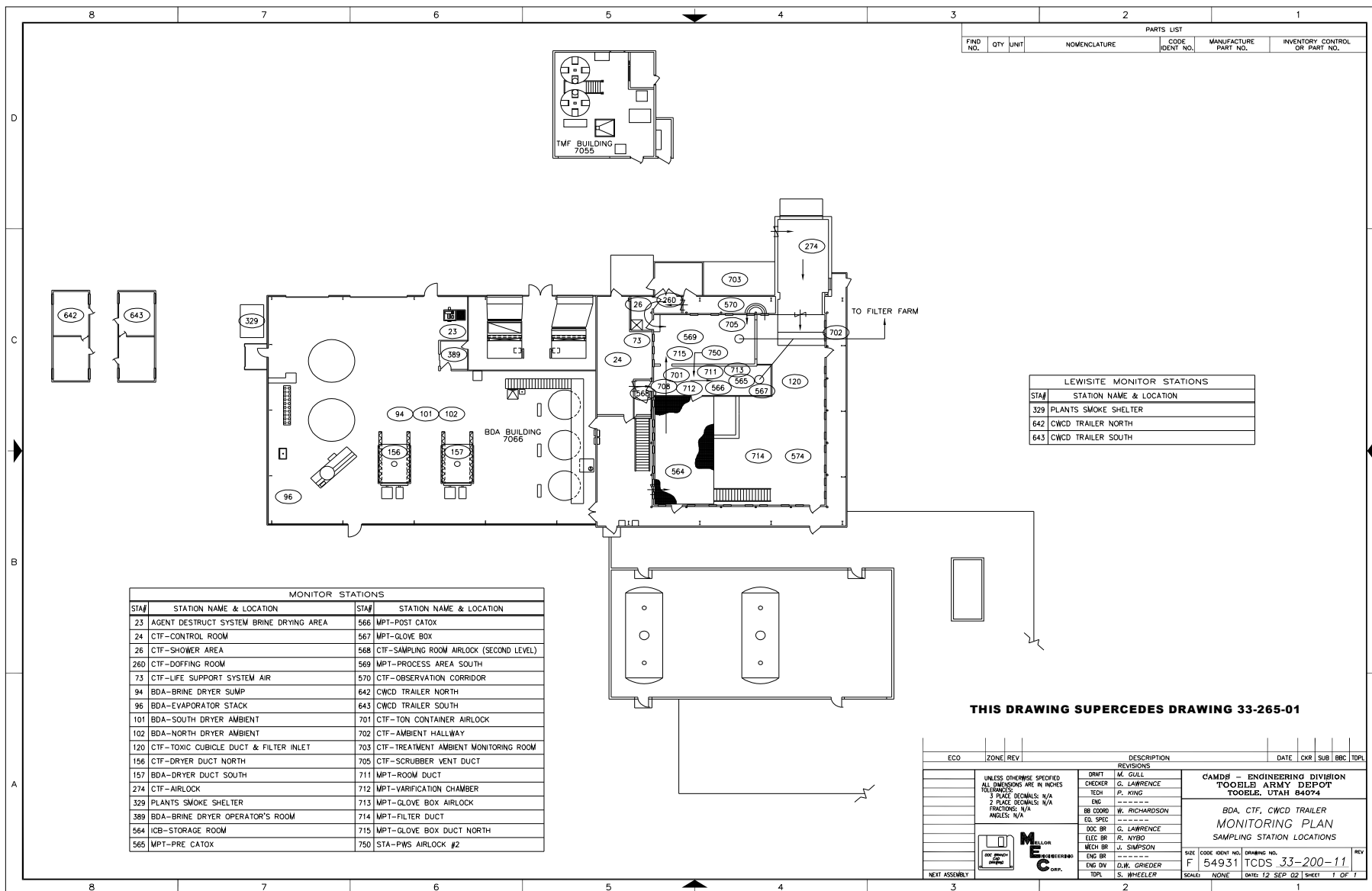




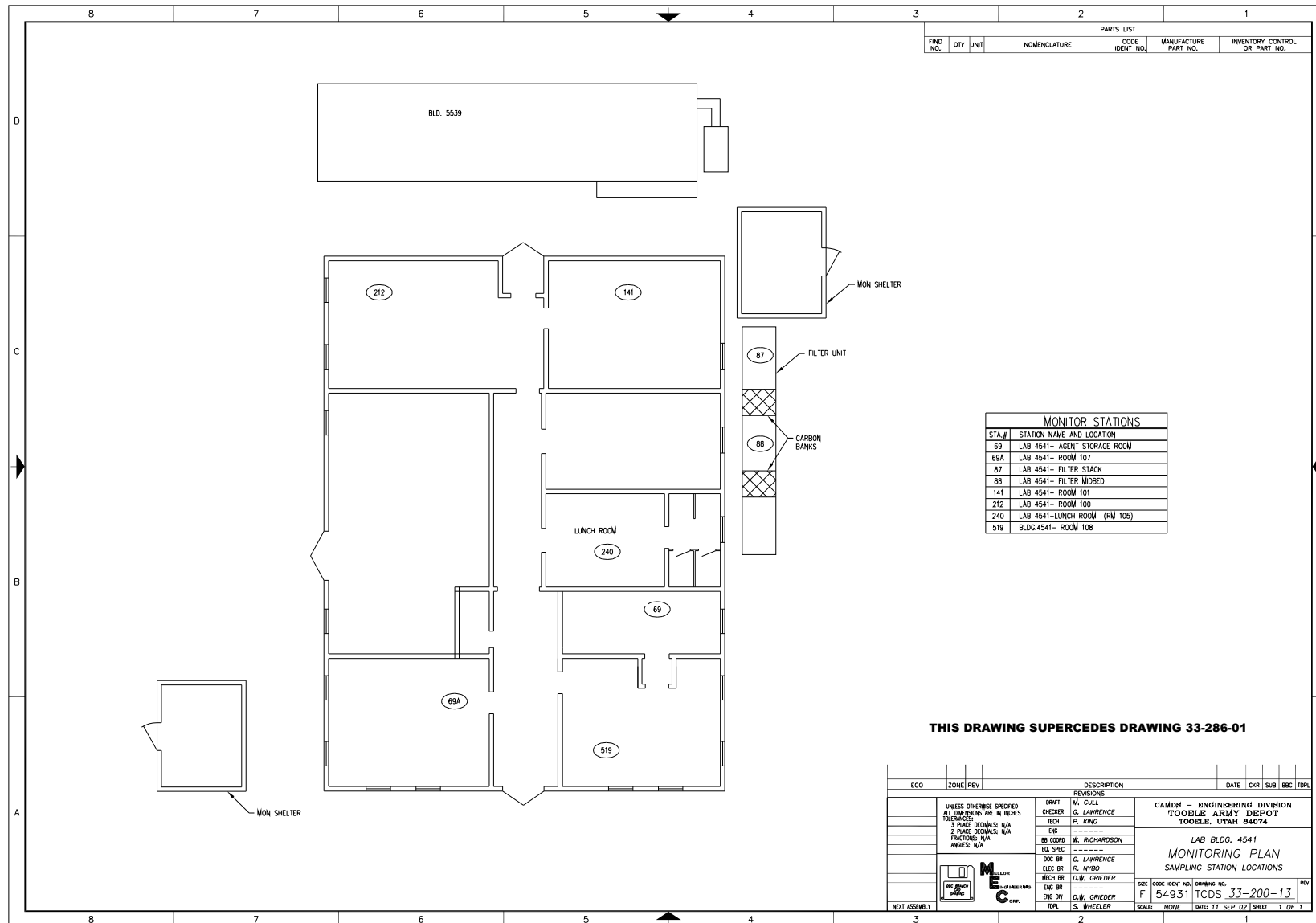




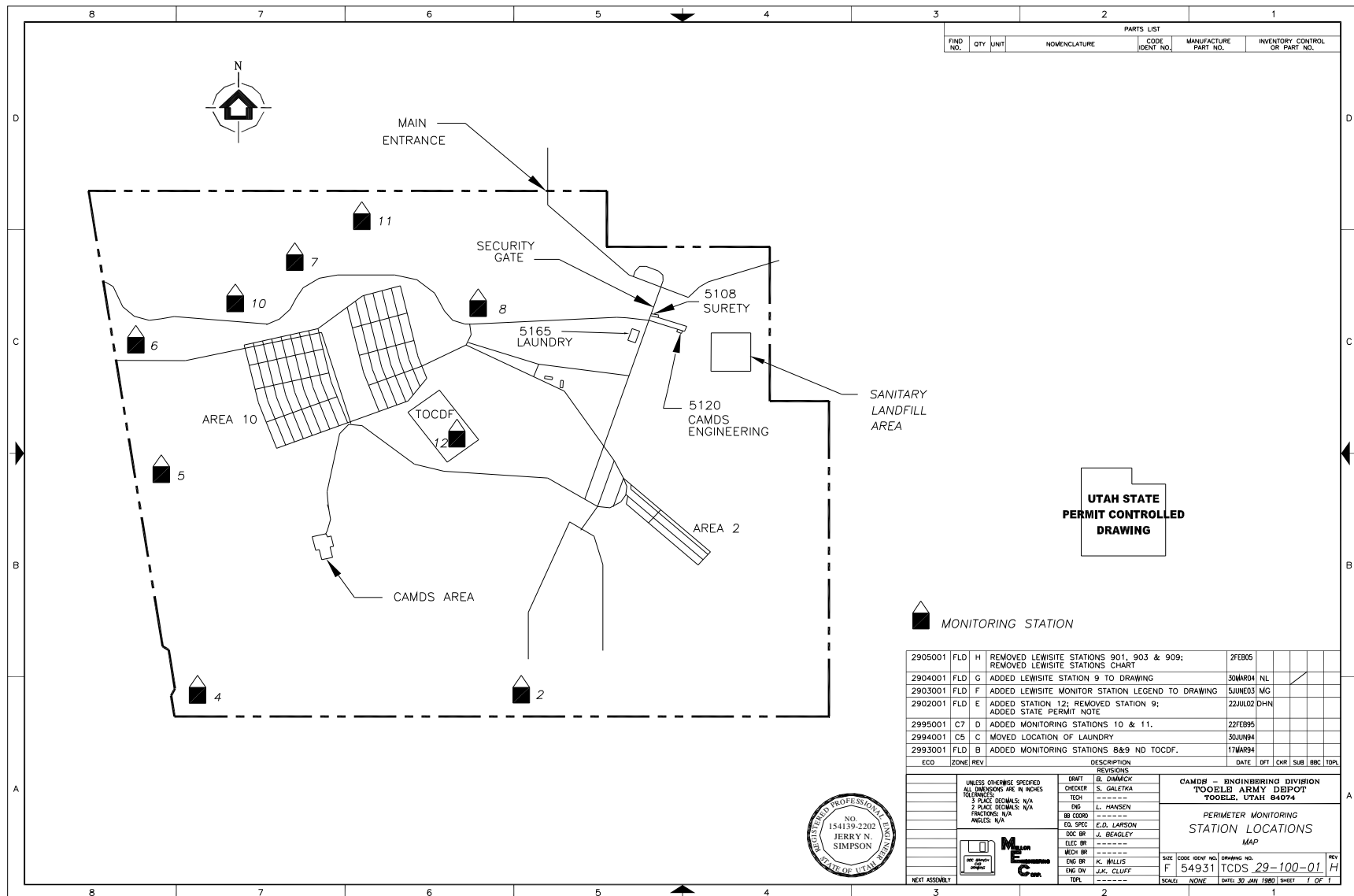
CAMDS  
Attachment 16  
Site Monitoring Plan  
April 2008



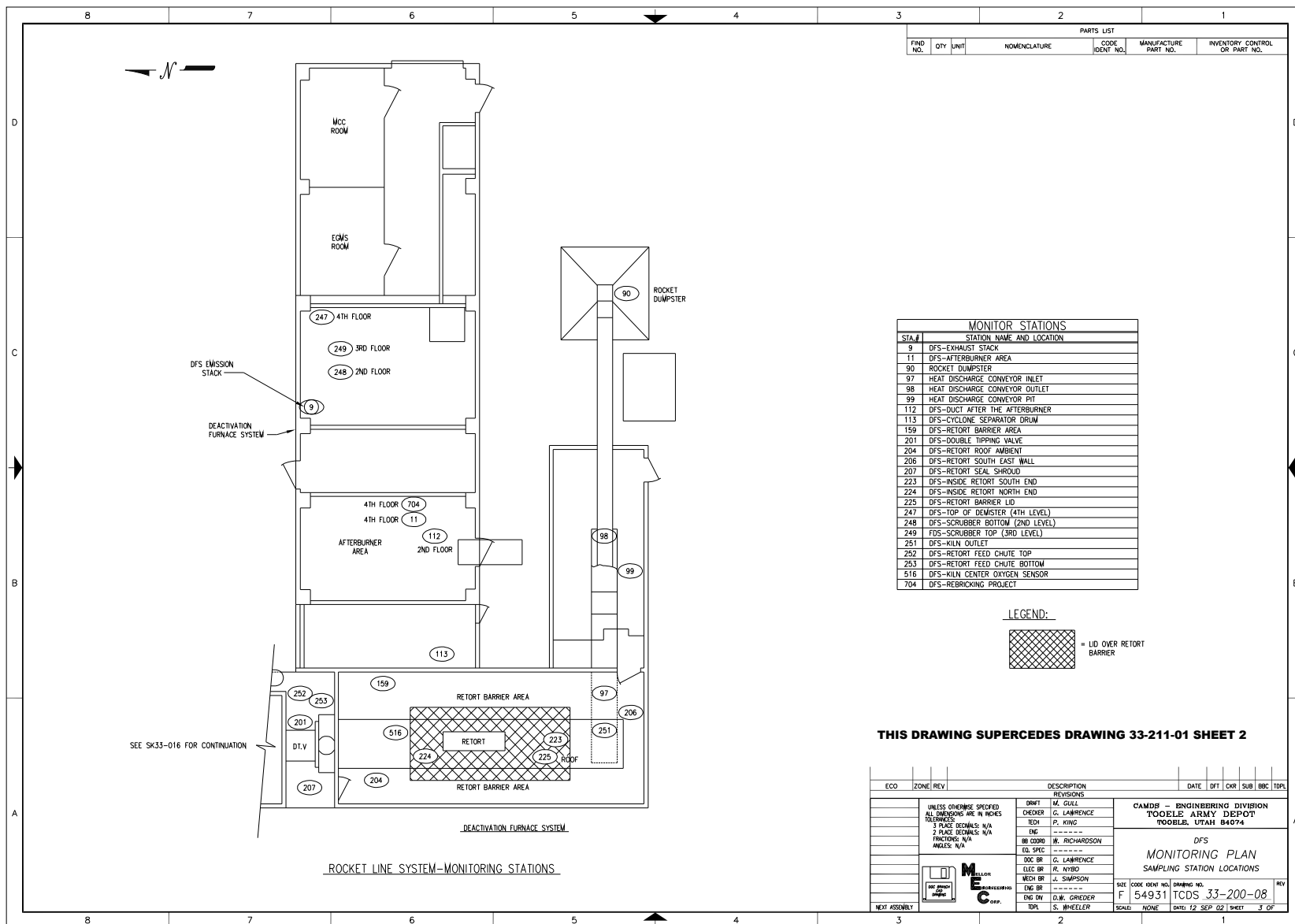




CAMDS  
Attachment 16  
Site Monitoring Plan  
April 2008







## **Appendix D**

### **AMSCM-OPDC Form 5020-R-E**

## SECTION I CHANGE REQUEST

Requestor: [Redacted] Date of Request: 8-5-04

[illegible]

## SECTION II REQUIRED SIGNATURES

SAFETY	Concur	Non-Concur	Date 8/5/04
QA/QC	Concur	Non-Concur	Date 8/5/04
CMO	Concur	Non-Concur	Date 8-5-04
Monitoring	Concur	Non-Concur	Date 8-5-04
Comments	STATION 716 to be shut down permanently		

### SECTION III

SAF QA/QC FAX # 4596 \_\_\_\_\_ Date \_\_\_\_\_

SCITECH, Comp Spt. FAX # 833-0171 \_\_\_\_\_ Date \_\_\_\_\_

## SECTION IV CERTIFICATION OF CHANGE

Operator Signature: [Signature] Date: 8-5-04 Time: 1:00

# **Appendix E**

## **References**

### **References**

1. CMA, *Monitoring Concept Plan*, June 2004.
2. CMA, LMQAP, *Laboratory and Monitoring Quality Assurance Plan*, June 2004.
3. RCRA Part B Permit Attachment 3, The CAMDS *Laboratory and Monitoring Quality Control Plan*, (CLMQCP), Current Version.
4. RCRA Part B Permit Attachment 16, The CAMDS *Site Monitoring Plan* (Current Version).

# **Appendix F**

## **Glossary**

## Glossary

### Section 1. Abbreviations

ACAMS	Automatic Continuous Air Monitoring System
ASC	Allowable Stack Concentration
CEMS	Continuous Emission Monitoring System
CSDP	Chemical Stockpile Disposal Program
DAAMS	Depot Area Air Monitoring System
DA PAM	Department of Army Pamphlet
DAS	Data Acquisition System
DCD	Deseret Chemical Depot
ECC	Explosive Containment Cubicle
EMO	Environmental Monitoring Office
FPD	Flame Photometric Detector
GC	Gas Chromatography
GLD	Gross Level Detector
IDLH	Immediately Dangerous to Life and Health
IAW	In Accordance With
IH	Industrial Hygiene
LOQ	Limit of Quantification
LMQAP	Laboratory and Monitoring Quality Assurance Plan
MPL	Maximum Permissible Limit
MS	Mass Spectrophotometry
NRT	Near Real Time
P&A	Precision and Accuracy
PCT	Pre-Concentrator Tube
PMCD	Program Manager for Chemical Demilitarization
PSC	Personnel Support Complex
QA	Quality Assurance
RMD	Risk Management Division
SOP	Standing Operating Procedure
SEL	Source Emission Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
WPL	Worker Population Limit

### Section 2. Terms

GA	Ethyl N, N-dimethylphosphoramidate-cyanidate
GB	Isopropylmethylphosphonofluoridate
HD	Bis(2-chloroethyl) sulfide
L	Lewisite, dichloro-2-chlorovinyl arsine
VX	O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate